

REMARKS

Claims 2-19 are currently pending in the present invention. Claims 2-19 have been amended and claim 1 has been canceled in this response. Favorable reconsideration and allowance of the present application are respectfully requested in view of the remarks presented herein below.

Claim Rejections Under 35 U.S.C. § 112

Claims 1-19 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. These rejections are respectfully traversed.

1. With respect to claim 1, the rejection has been rendered moot in view of the cancellation of claim 1.
2. Claims 2-19 are rejected because the numbers in parentheses render the claims unclear. Claims 2-19 have been amended to remove the reference numbers. Thus, this rejection is rendered moot in view of the amendments.
3. Claims 2-4, 6, 8, 11 and 17-19 are rejected because it is unclear whether “a second air stream” is referring to the “second air stream” in claim 1. Claims 2-4, 6, 8, 11 and 17-19 have been amended to recite “the second air stream”. Thus, this rejection is rendered moot in view of the amendments.
4. Claim 3 is rejected because it is unclear whether the feature “joins the rest of the second air stream” is meant to provide that a part of the second air stream does not flow into the auxiliary passageway. Claim 3 has been amended to recite “joins the rest of the second air stream which does not flow into the auxiliary passageway.” Thus, this rejection is rendered moot in view of the amendments.
5. Claims 5 and 7 are rejected because it is unclear as to the meaning of the word “formed” and whether the regeneration heater and/or auxiliary heater are part of the refrigerant circuit. Claims 5 and 7 have been amended to recite “heater is (are) heating-heat exchanger(s) of the refrigerant circuit.” Thus, it is

- respectfully submitted that the claims are clearly recited and these rejections are rendered moot in view of the amendments.
6. Claims 8 and 19 are rejected because it is unclear whether “a first air stream is referring to the “first air stream” in claim 1. Claims 8 and 19 have been amended to recite “the first air stream”. Thus, this rejection is rendered moot in view of the amendments.
 7. Claims 8 and 19 are rejected because it is unclear whether the “first adsorptive element” and/or the “second adsorptive element” are the “adsorptive element.” Claims 2 and 3 have been amended to recite “adsorptive unit” and claims 8 and 19 have been amended to recite “wherein said adsorptive unit includes a first adsorptive element and a second adsorptive element” for clarification. Thus, this rejection is rendered moot in view of the amendments.
 8. Claims 17 and 18 are rejected because in view of “joins the rest of the second air stream” recited in claim 3, it is unclear whether all of the second air stream must flow into the auxiliary passageway. Claims 17 and 18 have been amended to recite “a regeneration heater which heats the part of the second air stream prior to its entrance into the humidity control passageway and the auxiliary passageway.” In view of the amendments of claims 17 and 18 as well as claim 3 discussed above, it is respectfully submitted that claims 17 and 18 are definite and clear.

In view of the above amendments and remarks, it is respectfully submitted that claims 2-19 are definite. Thus, it is further respectfully submitted that these rejections under 35 U.S.C. § 112, second paragraph, should be withdrawn.

Claim Rejections Under 35 U.S.C. § 102 / § 103

Claims 1-19 are rejected under 35 U.S.C. § 102(b) as being anticipated by Yuji (JPN 2001263729A; hereinafter “Yuji”); Claims 6, 7, 13, 14, 16 and 18 are rejected under 35 U.S.C. § 103(a) as being anticipated by Yuji, in view of Fujimura (JPN 08094124A; hereinafter “Fujimura”). These rejections are respectfully traversed.

Independent claim 2 is directed to a humidity control device. The humidity control device as recited in amended claim 2 comprises:

an adsorptive unit having a humidity control passageway whose surface is provided with an adsorbent and which is capable of adsorbing moisture from a first air stream and of releasing moisture to a second air stream; and

an auxiliary passageway through which air flows to cool the humidity control passageway when adsorbing moisture and heat the humidity control passageway when releasing moisture, the humidity control device supplying to an indoor space an air stream after the adsorptive unit controls humidity of the air stream, wherein,

the auxiliary passageway is configured such that all of the second air stream prior to its passage through the humidity control passageway flows into the auxiliary passageway as a heating fluid when the adsorptive unit is regenerated by releasing moisture from the humidity control passageway.

With this arrangement, the second air stream (all or a part of), prior to its passage through the humidity control passage, passes through the auxiliary passageway when the adsorptive unit is regenerated by releasing moisture from the humidity control passageway. The auxiliary passageway allows the second air stream for cooling the humidity control passageway when the humidity control passageway adsorbs moisture and heating the humidity control passageway when the humidity control passageway releases moisture. As a result, a sufficient level of amount of regeneration is maintained and the device performance is improved. See line 14, page 39 to line 2, page 40 and line 24, page 41 to line 5, page 42 of the specification.

In contrast, Yuji describes an adsorption/desorption device and a moisture adjusting system capable of improving adsorption capability by lowering temperature of dehumidified air upon adsorption and regenerating the adsorption capability by raising temperature of humidified air upon regeneration. Specifically, outside air (OA) is dehumidified by passing through a first adsorption element. A part of the outside air (OA) is heated by a heating coil and passes through heat exchange passages of a second adsorption element when it is regenerated by releasing moisture from the adsorption-and-desorption passage to the room air (RA). See Abstract and paragraphs 0022 and 0023 and Drawings 1-3 of Yuji. In other words, completely different air streams (OA, RA) are respectively passing through the heat exchange passage (22) and the adsorption-and-desorption passage (21) of the adsorption element (3). With this arrangement, Yuji is concerned with separately controlling a temperature of a first air passing through the heat

exchange passage and a temperature of a second air passing through the adsorption-and-desorption passage in order to balance the temperatures of the two passageways. This is wholly unlike the present invention which provides an auxiliary passageway configured so that all of the second air stream prior to its passage through the humidity control passageway flows into the auxiliary passageway as a heating fluid when the adsorptive unit is regenerated by releasing moisture from the humidity control passageway. Specifically, the air passing through the auxiliary passageway of the adsorptive unit is the same air prior flowing through the humidity control passageway of the adsorptive unit. As a result, one aspect of the present invention simplifies temperature control of passageways and improves the regeneration capabilities of an adsorptive unit.

Thus, Yuji fails to disclose or suggest that “the auxiliary passageway is configured such that all of the second air stream prior to its passage through the humidity control passageway flows into the auxiliary passageway as a heating fluid when the adsorptive unit is regenerated by releasing moisture from the humidity control passageway” as recited in claim 2.

Fujimura fails to remedy the above-noted deficiencies of Yuji. Fujimura describes a heat exchanger for obtaining total heat exchange ventilating, dehumidifying and humidifying functions. The heat exchanger is controlled to switch the indoor air and outdoor air exhaust channels passed through the exchanger at the times of the total heat exchange ventilating, dehumidifying and humidifying and heat regenerating. See paragraphs 0016 and 0019 and Figures 2 and 3 in Fujimura. However, Fujimura is not concerned with cooling a humidity control passageway when adsorbing moisture and heating the humidity control passageway when releasing moisture as in the present invention. Thus, similarly to Yuji, Fujimura does not disclose or suggest that “the auxiliary passageway is configured such that all of the second air stream prior to its passage through the humidity control passageway flows into the auxiliary passageway as a heating fluid when the adsorptive unit is regenerated by releasing moisture from the humidity control passageway” as recited in claim 2.

In addition, Fujimura is completely silent on an auxiliary passageway that is essential to Yuji’s device and is not concerned with providing cooling during moisture adsorption and

heating during moisture release. Thus, it is respectfully submitted that one of ordinary skill in the art would not combine Fujimura and Yuji in an effort to satisfy the claimed features.

Independent claim 3 is directed to a humidity control device. The humidity control device as recited in amended claim 3 comprises:

an adsorptive unit having a humidity control passageway whose surface is provided with an adsorbent and which is capable of adsorbing moisture from a first air stream and of releasing moisture to a second air stream; and

an auxiliary passageway through which air flows to cool the humidity control passageway when adsorbing moisture and heat the humidity control passageway when releasing moisture, the humidity control device supplying to an indoor space an air stream after the adsorptive unit controls humidity of the air stream, wherein,

the auxiliary passageway is configured such that a part of the second air stream prior to its passage through the humidity control passageway flows into the auxiliary passageway as a heating fluid when the adsorptive unit is regenerated by releasing moisture from the humidity control passageway, joins the rest of the second air stream which does not flow into the auxiliary passageway, and passes through the humidity control passageway.

Again, Yuji is merely concerned with providing two different air streams (OA, RA) that respectively pass through the heat exchange passage (22) and the adsorption-and-desorption passage (21) of the adsorption element (3). This is unlike the present invention in which the air passing through the auxiliary passageway of the adsorptive unit is the same air prior flowing through the humidity control passageway of the adsorptive unit. Thus, for at least the same reasons discussed above with respect to claim 2, Yuji does not disclose or suggest that "the auxiliary passageway is configured such that a part of the second air stream prior to its passage through the humidity control passageway flows into the auxiliary passageway as a heating fluid when the adsorptive unit is regenerated by releasing moisture from the humidity control passageway, joins the rest of the second air stream which does not flow into the auxiliary passageway, and passes through the humidity control passageway" as recited in claim 3. Fujimura fails to remedy the deficiencies of Yuji.

In view of the above amendments and remarks, it is respectfully submitted that independent claims 2 and 3 as amended are patentable over cited prior art. As claims 4-19 are dependent to claims 2 and 3 respectively, it is respectfully submitted that these claims are also patentable for at least the same reasons discussed with respect to claims 2 and 3. Thus, it is respectfully submitted that these rejections should be withdrawn.

CONCLUSION

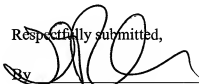
In view of the above amendment, applicant believes the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Dennis P. Chen Reg. No. 61,767 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,



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